

AMSAT News Service Weekly Bulletins

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AMSAT NEWS SERVICE

ANS-157

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on <http://www.amsat.org> publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: [ans-editor\(a\)amsat.org](mailto:ans-editor(a)amsat.org)

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see:
<https://mailman.amsat.org/postorius/lists/ans.amsat.org/>

In this edition:

- * Call for Nominations – 2021 AMSAT Board of Directors Election
- * EASAT-2 and Hades Launch Delayed Again
- * Satellite Controllers Announce Schedule Changes
- * VUCC Awards-Endorsements for June 1, 2021
- * The AMSAT SA Dual Band 70cm/2M Yagi Mark II Now Available
- * No Changes to AMSAT-NA TLE Distribution for June 3
- * Amicalsat 6 June S-band Transmission
- * ARISS News
- * Upcoming Satellite Operations
- * Hamfests, Conventions, Maker Faires, and Other Events
- * Satellite Shorts From All Over

ANS-157 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 157

To: All RADIO AMATEURS

From: Radio Amateur Satellite Corporation

712 H Street NE, Suite 1653

Washington, DC 20002

DATE 2021 June 6

Call for Nominations – 2021 AMSAT Board of Directors Election

AMSAT solicits nominations for the 2021 AMSAT Board of Directors election, to be held in the third quarter of the year. The seats of the following four incumbent Directors expire in 2021 and will be filled by this year's election:

Jerry Buxton N0JY

Drew Glasbrenner K04MA

Patrick Stoddard WD9EWK

Michelle Thompson W5NYV

Further, up to two Alternate Directors may be elected for one-year terms.

A valid nomination for Director must be written and requires either one Member Society or five current individual members in good standing to nominate an AMSAT member. Written nominations, with the nominee's name, call sign, and contact information, as well as the nominators' names, call signs, and contact information, should be sent to the AMSAT Secretary:

Jeff Davis, KE9V
1909 S. Batavia Avenue
Muncie, IN 47302-2044
ke9v at amsat.org

A copy should be sent to Executive Vice President Paul Stoetzer, at n8hm at amsat.org.

The AMSAT bylaws require that the nomination be written and in the form specified by the Secretary. The Secretary has elected to accept written nomination materials via mail or in electronic form, including e-mail or electronic image of a paper document. Fax transmissions cannot be accepted.

No matter what means are used, petitions MUST be received by the Secretary no later than June 15th. The Secretary will verify the qualifications of candidates and nominating members or Member Societies as petitions are received, and will notify candidates whether their nominations are in order by the end of June.

[ANS thanks Jeff Davis, KE9V, AMSAT Secretary, for the above information]

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Join the 2021 President's Club!
Score your 2" 4-Color Accent Commemorative Coin.
This gold finished coin comes with
Full Color Certificate and Embroidered "Remove Before Flight" Key Tag
Donate today at
<https://www.amsat.org/join-the-amsat-presidents-club/>
You won't want to miss it!
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EASAT-2 and Hades Launch Delayed Again

Spain's URE reports the launch of EASAT-2 and Hades satellites have suffered another delay

A translation of the URE post reads:

EASAT-2 and Hades, the communications satellites for radio amateurs built by AMSAT-EA, will not be able to be launched in June with SpaceX as planned, as the FAA (the American Aviation Administration) has rejected the license to the integrator Momentus Space, on whose orbital transfer vehicle Vigoride was to be mounted the AlbaPOD ejector from Alba Orbital, within which are the satellites of AMSAT EA, as well as other organizations and universities.

The reasons for the FAA's rejection stem from the company's capital structure, which, according to the American agency, could endanger the national security of the United States. The next launch opportunity could come in December.

EASAT-2 and Hades were to have been launched in January this year aboard a SpaceX Falcon-9 rocket, but the Momentus license was also rejected by the FAA at the time.

Both satellites are FM and FSK voice repeaters, also having digitized voice

recordings. Hades also incorporates an SSTV camera developed by the University of Brno in the Czech Republic and EASAT-2 incorporates as an experimental load a basaltic material from Lanzarote, similar to lunar basalts, provided by the research group on meteorites and planetary geosciences of the CSIC in the Institute of Geosciences, IGEO (CSIC-UCM) and that it could be used as a construction material on the Moon. This project was promoted and has the collaboration of the ETSICCP (UPM).

The frequencies coordinated with the IARU for both satellites are the following:

EASAT-2

- 145.875 MHz uplink, Modes: FM voice (without sub-tone) and FSK 50 bps
- 436.666 MHz downlink, Modes: FM voice, CW, FSK 50 bps, FM voice beacon with AM5SAT callsign

HADES

- 145.925 MHz uplink, Modes: FM voice (without sub-tone) and FSK 50 bps
- 436.888 MHz downlink, Modes: FM voice, CW FSK 50 bps, SSTV Robot 36, FM voice beacon with callsign AM6SAT

Source URE <https://tinyurl.com/IARU-Spain>

Read the May 2021 AMSAT-EA newsletter in English at https://www.amsat-ea.org/app/download/12773993/AMSAT-EA-Boletin_05-2021.pdf

[ANS thanks Southgate ARC for the above information]

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Need new satellite antennas? Purchase Arrows, Alaskan Arrows, and M2 LEO-Packs from the AMSAT Store. When you purchase through AMSAT, a portion of the proceeds goes towards Keeping Amateur Radio in Space.
<https://amsat.org/product-category/hardware/>

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Satellite Controllers Announce Schedule Changes

A0-73

After several months of being in full Sunlight, A0-73 has now entered a period of eclipses. The transponder was commanded "on" on May 30, and the team will evaluate performance over the coming days. An initial check of telemetry suggests the Lithium Ion cells are functioning well and satellite power budget is nominal.

[ANS thanks David Bowman, G0MRP for the above information]

I0-86

Effective immediately the activation of FM voice repeater on I0-86 (the amateur payload on LAPAN-A2/ORARI satellite) will be reduced, to preserve the life of the repeater (already more than 5 years old) while waiting for the successor, the LAPAN-A5. If required for emergency communication, we will activate the repeater full as usual.

[ANS thanks Yono Adisoemarta, YD0NXX of the AMSAT Indonesia Technical Team for the above information]

N0-104 and N0-84

PSAT2(N0-104) will enter about 2 weeks of good USA coverage between about 10 to 22 June. Normally its low inclination orbit favors the southern USA. But the orbit is also elliptical and so there are times when the elevation angle to more northern stations rises as much as 20 degrees, bringing

higher latitude stations into the footprint.

Currently it's VHF Xponder has been in DTMF & APRS-to-Voice (A2V) mode but with the ISS digipeater being inactive, we will enable PSAT2 for normal APRS operations plus the A2V feature. Its HF/UHF transponder will remain in linear operation for PSK31 SSTV and Voice. See <http://aprs.org/psat2.html> for how to use the A2V feature.

We also note that PSAT(N0-84) has awakened from poor sun angles and we will try to activate its digipeater.

[ANS thanks Bob Bruninga, WB4APR for the above information]

F0-99

JAMSAT has published an updated operating schedule for NEXUS, F0-99, at <https://www.jamsat.or.jp/>

[ANS thanks JAMSAT for the above information]

VUCC Awards-Endorsements for June 1, 2021

Here are the endorsements and new VUCC Satellite Awards issued by the ARRL for the period May 1, 2021 through June 1, 2021. Congratulations to all those who made the list this month!

CALL	May	June
WC7V	1232	1250
AA5PK	1074	1115
N8R0	1080	1096
N3GS	687	705
NS3L	681	695
K7TAB	627	656
WD9EWK (DM43)	640	650
N5B0	525	580
AC90	475	549
AF5CC	477	525
K5IX	450	489
KS1G	413	427
W8LR	400	425
KJ4M	171	357
IK0WGF	258	324
DF2ET	250	300
N7Z0	250	275
N8URE (FM19)	243	263
KN2K	200	253
EA2AA	153	251
N3CAL	181	204
RA3DNC	110	142
AC9DX	100	141
N2ZN	120	135
VE3KY	103	128
DG9MA	New	125
KP4RV	105	125
SQ5NRY	New	105
NR1Z	New	104
KC1MEB	New	102
W4IPA	New	101
NU1U	New	100
XE1MY0	New	100

If you find errors or omissions. Please contact me off-list at <mycall>@mycall.com and I'll revise the announcement. This list was developed by comparing the ARRL .pdf listings for the two months. It's a visual comparison so omissions are possible. Apologies if your call was not mentioned.

Thanks to all those who are roving to grids that are rarely on the birds. They are doing a lot of the work!

[ANS thanks Ron Parsons, W5RKN for the above information]

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AMSAT's GOLF Program is about getting back to higher orbits, and it all begins with GOLF-TEE – a technology demonstrator for deployable solar panels, propulsion, and attitude control. Come along for the ride. The journey will be worth it!

<https://tinyurl.com/ANS-GOLF>

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The AMSAT SA Dual Band 70cm/2M Yagi Mark II Now Available

AMSAT SA has launched Mark II of its dual band 70 cm/2 m handheld beam antenna with a new, easier to hold handle and improved coaxial terminations. The Yagi has been retuned for maximum performance in the amateur radio 2 m and 70 cm satellite bands. The coax cable is terminated crimped brass lugs instead of being soldered making it environmentally more robust. The driven element has been adjusted to accommodate the change in the connection. More about the Yagi. The antenna has a 50-ohm designed driver. The Yagi has a unique element called an 'Open Sleeve' which is a director very close to the driven element. The driven element is sized for 2 m. When operating on 70 cm the 'Open Sleeve' acts as part of the driven element on 70 cm (the third harmonic of 2 m).

The original concept was developed in 1946 by Dr J T Bolljahn of the Stanford Research institute but was not introduced into amateur radio until the 1950s. The AMSAT SA version is based on a design by DK7ZB with modifications by WB5CXC. The first South African version was a collaboration between Guy Eales, ZS6GUY and Gary Immelman, ZS6YI. It was developed for YOTA 2018 where young people successfully used the antenna operating satellites using hand-held transceivers.

The mechanical structure was redesigned by Gary Immelmann ZS6YI. A choke around the boom was added to isolate the antenna from the coax and reduce the effect human contact has on the antenna. A handle was added on the boom end which makes it more comfortable to hold and further isolates the antenna from the handler. The AMSAT SA Yagi is manufactured in one of Gary Immelmann's factories in Vereeniging. It has two elements on 145 MHz and 3 elements on 435 MHz.

For its size, the antenna has excellent gain: 145 MHz: 4.12 dBd or 6.3 dBi and 435 MHz: 6.23 dBd or 8.4 dBi. The Yagi is broadband with measured SWR being almost flat over the entire bands. The antenna is plug and play, no tools are needed except for soldering on a connector to suit the application. It comes complete in a carry bag with full instructions. This antenna can be assembled and dissembled in minutes. The price of the MKII Yagi is R400 for AMSAT SA and SARL members. Non-members pay R500 (approximately \$36.75 US). The courier charge is R120 (approximately \$9 US, Postnet to Postnet). Ask for a quote for other courier options. Find more details and order forms on <http://www.amsatsa.org.za/>

[ANS thanks AMSAT SA for the above information]

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Want to fly the colors on your own grid expedition?
Get your AMSAT car flag and other neat stuff
from our Zazzle store!
25% of the purchase price of each product goes
towards Keeping Amateur Radio in Space
https://www.zazzle.com/amsat_gear

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No Changes to AMSAT-NA TLE Distribution for June 3

No amateur satellite additions or deletions have occurred in this week's distribution.

However, TLE (KEPS) have been updated and are available on the AMSAT-NA website
at: <https://www.amsat.org/keplerian-elements-resources/>

or to receive a weekly TLE (KEPS) email, subscribe to the Keplerian Elements Mailing list (page 2) by clicking on "Keps" at:
<https://mailman.amsat.org/postorius/lists/?page=2>

[ANS thanks Ray Hoad, WA5QGD, AMSAT Orbital Elements Manager, for the above information]

Amicalsat 6 June S-band Transmission

The 6 June amicalsat will transmit a picture above Europe, US and Asia.

Here is when a transmission will start :

09:35 UTC
05:58 UTC
3:18 UTC

First CW is transmitted during one second, and then the frames follow. The RTC onboard is not very accurate due to high temperature change, allow up to two minutes drift on the time given. (because this is a planned task in the satellite)

The transmission will occur on the S-band coordinated frequency: 2415.300 MHz. Due to temperature and hardware limitation the frequency might be a little lower. The modulation of the S-band downlink is GFSK 1Mbps. The downlink signal is RHCP.

A picture transmission is about 3-5 minutes long.

[ANS thanks Christophe Mercier and Julien Nicolas, F4HVB, for the above information]

ARISS NEWS

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide, unless otherwise noted.

The Father's House Christian School (Home Education Provider: Roots), Morinville, Alberta, Canada, multi-point telebridge via VK4KHZ. The ISS callsign is presently scheduled to be NA1SS.

The scheduled astronaut is Akihiko Hoshide KE5DNI

Contact was successful: Wed 2021-06-02 14:28:53 UTC 44 deg

Congratulations to the he Father's House Christian School students and Akihiko

Watch livestream at https://youtu.be/S0_-QFkXdi4

About Gagarin From Space. Conducting an amateur radio session with school children of Mordovia, Russia, direct via TBD. The ISS callsign is presently scheduled to be RS0ISS

The scheduled astronaut is Oleg Novitskiy

Contact is go for: Sun 2021-06-06 12:25 UTC

College Maurice Genevoix, Couzeix, France, multi-point telebridge via ON4ISS. The ISS callsign is presently scheduled to be FX0ISS

The scheduled astronaut is Thomas Pesquet KG5FYG

Contact is go for: Mon 2021-06-07 13:07:41 UTC 70 deg

MAI-75 SSTV Events:

MAI-75 will be conducting their experiment of transmitting SSTV images over specific orbits that overfly Moscow on June 9 and 10. Amateurs along the ground track of these orbits should have the opportunity to receive these images as well. Modes and targeted transmission periods are listed below. SSTV images will be transmitted at 145.800 MHz using a Kenwood TM-D710 transceiver. They are expected to use the PD-120 SSTV format.

Wed 2021-06-09: 09:35 to 13:50 UTC

Thu 2021-06-10: 08:55 to 15:50 UTC

St. Joseph's Catholic Primary School, Bombala, NSW, Australia, telebridge via IK1SLD. The ISS callsign is presently scheduled to be OR4ISS

The downlink frequency is presently scheduled to be 437.525 MHz

The scheduled astronaut is Shane Kimbrough KE5HOD

Contact is go for: Thu 2021-06-10 10:45:26 UTC 80 deg

Lipetsk, Russia, direct via TBD. The ISS callsign is presently scheduled to be RS0ISS

The scheduled astronaut is Pyotr Dubrov

Contact is go for: Fri 2021-06-11 11:40 UTC

Velikiy Ustyug, Russia, direct via TBD. The ISS callsign is presently scheduled to be RS0ISS

The scheduled astronaut is Oleg Novitskiy

Contact is go for: Sat 2021-06-12 09:15 UTC

Lipetsk, Russia, direct via TBD

The ISS callsign is presently scheduled to be RS0ISS

The scheduled astronaut is Pyotr Dubrov

Contact is go for Sat 2021-06-12 10:55 UTC

The latest information on the operation mode can be found at <https://www.ariss.org/current-status-of-iss-stations.html>

The latest list of frequencies in use can be found at <https://www.ariss.org/contact-the-iss.html>

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

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AMSAT, along with our ARISS partners, is developing an amateur radio package, including two-way communication capability, to

be carried on-board Gateway in lunar orbit.

Support AMSAT's projects today at <https://www.amsat.org/donate/>

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Upcoming Satellite Operations

Upcoming Roves:

Quick Hits:

WY7AA: FI will be in FN02 starting 6/6 for a few weeks. Operating Sats. holiday style. If you need FN01, FN02, FN03, FN12 please let me know and we can try to set something up. FN01,03, and 12 will likely each be one day roves. FM and SSB

EA4M: : Hi guys later in June I'll be in IN73 on holidays, probably for a week or so, I will try some birds stay tuned on tweeter for schedules.

VE6WK: DN49: – I'm planning a SOTA rove to DN49 on June 12 and may hit some other grids on the way there/back.

ND0C and KE0WPA: In June @kylee_ke0wpa and I, along with our resident photojournalist (Mom/Amy), will be taking a family excursion to the southwest and working some sats as time permits. Here are the less commonly worked grids from which we plan to operate. We will hit other grids too. DM67 6/15 – 6/17, DM56 6/18, DM45 6/19, DN63 7/2, DN64 7/2 & 7/3

AD0DX (VA3IIR) :Long Range Rover plans: VA3IIR in FN15/25 June 18 FM and SSB

WA5RR: I'm looking at doing a rove in DL98 with an overnight stay in Eagle Pass, TX around the last week in June. Details to follow.

VP2V/K3TRM: I will be operating from Tortola, BVI as VP2V/K3TRM on July 4-17, 2021. Activity will be on 40-6M SSB & digital, and satellite.

N5LEX: CN98 last week of June.

DM62: K5TA, I'm tentatively planning for DM62 ~9-July, when there are are several good passes mid-day, making it a doable day-trip for me....

EN57/67: @SeanKutzko KX9X and @Nancy_N9NCY will celebrate Sean's birthday in the Michigan's Keweenaw Peninsula July 15-19. Look for them on FM and SSB satellites, with the possibility of some Parks On The Air activity as well.

Please submit any additions or corrections to Ke0pbr (at) gmail.com

[ANS thanks Paul Overn, KE0PBR, AMSAT rover page manager, for the above information]

Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassador and ARRL registered instructor Clint Bradford, K6LCS, has a presentation scheduled for 06/15 in East Massachusetts. See <http://www.work-sat.com> for details.

[ANS thanks Paul Overn, KE0PBR, AMSAT Events page manager, for the above information]

Satellite Shorts From All Over

+ The International Space Station's robotic arm, Canadarm2, was struck by a piece of space debris. But luckily, it appears to be only a flesh wound, and the arm has been cleared for nominal operations while analysis on the strike continues. NASA and Canadian Space Agency officials don't know exactly when the arm was hit – or what hit it – but the damage was noticed on May 12 during a routine inspection. The hole is quite small, approximately 5 mm (.2 inches) in diameter. (ANS thanks Universe Today for the above information)

+ An absolutely mesmerizing and very instructional video graphic on the problem of orbital debris (ie. space junk), created by the European Space Agency, may be viewed at:
https://www.esa.int/ESA_Multimedia/Videos/2019/02/Distribution_of_space_debris_in_orbit_around_Earth
(ANS thanks Zach Metzinger, N0ZG0 for the above information)

+ A Cargo Dragon capsule took off at 1729z Thursday, June 3, on top of a Falcon 9 rocket to begin a two-day trip to the space station. This was the:

- 120th Falcon 9 flight
- 17th SpaceX launch of 2021
- 22nd SpaceX cargo flight to ISS
- 130th launch from pad 39A

This mission is set to deliver experiments, food, spare parts, a NASA-sponsored CubeSat built by middle school students in Tennessee, and other equipment to the space station's seven-person crew. The Dragon's entire cargo load, including pressurized and unpressurized sections, weighs in at 7,337 pounds (3,328 kilograms). That makes it the heaviest supply shipment SpaceX has ever sent to the space station. (ANS thanks Spaceflight Now for the above information)

+ Among the equipment sent to ISS on the Cargo Dragon launch, above, was the first satellite to be built by the island nation of Mauritius. It will be deployed in June by the KIBO robotic arm. The callsign is 3B8MIR (MIR-1 meaning Mauritius Imagery & Radio-communication Satellite 1). Payloads are a camera and a digipeater (bent tube) which will be made available to the HAM community worldwide when satellite is not downloading images or used for experimental purposes, the uplink will be on 145.9875 MHz and the downlink on 436.925 MHz, 9K2 GMSK, as coordinated with IARU. More information will be available on (<https://spacemauritius.com>) soon. (ANS thanks Jean Marc Momple, 3B8DU, for the above information)

+ China's robotic Tianzhou 2 cargo ship launched Saturday on top of a Long March 7 rocket and docked with the core module of the country's space station eight hours later, delivering fuel, crew supplies, extravehicular spacesuits, and other gear in preparation for the arrival of three astronauts in June. (ANS thanks Spaceflight Now for the above information)

+ American intelligence officials have found no evidence that aerial phenomena witnessed by Navy pilots in recent years are alien spacecraft, but they still cannot explain the unusual movements that have mystified scientists and the military, according to senior administration officials briefed on the findings of a highly anticipated government report. While a forthcoming unclassified version, expected to be released to Congress by June 25, will present few other firm conclusions, senior officials briefed on the intelligence conceded that the very ambiguity of the findings meant the government could not definitively rule out theories that the phenomena observed by military pilots might be alien spacecraft. (ANS thanks The New York Times for the above information)

+ The team behind NASA's InSight Mars lander has come up with an innovative way to boost the spacecraft's energy at a time when its power levels have been falling. The lander's robotic arm trickled sand near one solar panel,

helping the wind to carry off some of the panel's dust. The result was a gain of about 30 watt-hours of energy per sol, or Martian day. (ANS thanks Mars Daily for the above information)

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Store.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact info [at] amsat.org for additional student membership information.

73 and Remember to help keep amateur radio in space,
This week's ANS Editor, Mark Johns, K0JM
k0jm at amsat dot org